

712.5.01 Adjustments

General Provisions 101 through 150.

Section 713—Organic And Synthetic Material Fiber Blanket

713.1 General Description

This work includes furnishing and placing straw, excelsior, coconut fiber, wood fiber, or synthetic blankets over previously prepared and permanently grassed areas as shown on the Plans or as directed by the Engineer.

713.1.01 Definitions

- Straw Blanket: A machine-produced blanket of clean, weed-free, consistently thick straw from agricultural crops. The straw is evenly distributed over the entire area of the blanket.
- Excelsior Blanket: A machine-produced mat of curled wood excelsior. Eighty percent consists of 6 in (150 mm) or longer fiber evenly distributed over the entire blanket.
- Coconut Fiber Blanket: A machine-produced blanket of 100 percent coconut fiber evenly distributed over the entire blanket.
- Wood Fiber Blanket:
 - Type I—A machine-produced blanket manufactured with reprocessed wood fibers to a consistent thickness.
 - Type II—A hydraulically applied bonded fiber matrix which upon drying, adheres to the soil in the form of a continuous 100 percent coverage, biodegradable erosion control blanket
- Synthetic Fiber Blanket—A machine produced uniform blanket of ultraviolet degradable polypropylene staple fibers reinforced with ultraviolet degradable polypropylene netting.

713.1.02 Related References**A. Standard Specifications**

General Provisions 101 through 150.

B. Referenced Documents

General Provisions 101 through 150.

713.1.03 Submittals

Use approved materials from QPL 62 without further testing. Otherwise, submit materials for testing before use.

713.2 Materials

Use blankets that meet the following requirements for placement on slopes and waterways. For a list of organic material fiber blankets, see QPL 62.

A. Straw Blanket

Use blankets at least 48 in (1.2 m) wide and at least 3/8 in (9 mm) thick with a minimum dry weight of 0.5 lb/yd² (270 g/m²) and a stitch pattern and row spacing of no more than 2 in (50 mm). Have the top side covered with a photo-degradable plastic mesh having a maximum mesh size of 5/16 by 5/16 in (8 mm by 8 mm). The mesh will be sewn to the straw with biodegradable thread.

Use this blanket on slopes only.

B. Excelsior Blanket

Use a smolder-resistant blanket with the top side clearly marked. Use a blanket at least 48 in (1.2 m) wide and 1/4 in (6 mm) thick with a minimum dry weight of 0.8 lb/yd² (430 g/m²) and a stitch pattern and row spacing of no more than 2 in (50 mm).

- Slopes: Have the top side covered with a photo-degradable plastic mesh having a maximum mesh size of 1-1/2 by 3 in (38 by 75 mm).

- Waterways: Have the top and bottom sides of the blanket covered with a photodegradable plastic mesh having a maximum mesh size of 1 ½ x 3 in (38 x 75 mm), sewn to the fiber with biodegradable thread or otherwise bonded as approved by the Engineer.

C. Coconut Fiber Blanket

Use a blanket at least 48 in (1.2 m) wide and 1/4 in (6 mm) thick with a minimum dry weight of 0.5 lb/yd² (270 g/m²) and a stitch pattern and row spacing of no more than 2 in (50 mm). Use the blanket in waterways only.

Ensure that both sides of the blanket are covered with a photo-degradable plastic mesh with a maximum of 5/8 by 5/8 in (19 by 19 mm). Have the mesh sewn to the fiber with a breakdown-resistant synthetic yarn.

D. Wood Fiber Blanket

Type I

- Use a machine produced blanket manufactured to a consistent thickness using reprocessed wood fibers.
- Use a blanket at least 48 in (1.2 m) wide with a minimum dry weight of 0.35 lb/yd². (190 g/m²). Use the blanket on slopes only.
- Ensure that the top side of the blanket is covered with a photo-degradable plastic mesh with a maximum mesh size of 5/8 by 3/4 in (16 by 19 mm) securely bonded to the mat.
- Ensure that the fibers do not contain a growth that inhibits germination.

Type II

- Ensure the bonded fiber matrix is composed of long strand wood fibers or cellulosic-based fibers held together by a bonding agent, which, upon drying, becomes insoluble and non-dispersible.
- Apply the matrix at the following rates:

Application Rate	Slope
3,000 lbs/acre (3.4 Mg/ha)	4:1
3,600 lbs./acre (4.1 Mg/ha)	2:1
4,000 lbs./ acre (4.5 Mg/ha)	1:1

- Do not apply the bonded matrix on saturated soils or immediately before, during or after rainfall. Allow the matrix to dry for at least 24 hours after installation. After drying period, ensure that the bonded fiber matrix does not inhibit the germination or growth of plants beneath and through the formed matrix blanket and that it does not form a water insensitive crust.
- If bonded fiber matrix is to be used, the application of straw mulch for grassing operations is not required.

E. Synthetic Fiber Blanket

Use a blanket having a minimum net size of 5/8 x 3/4 inch (16 x 19 mm). Ensure the netting is securely bonded to the blanket and that the blanket conforms to the following physical properties:

<u>PROPERTY</u>	<u>MINIMUM VALUE</u>	<u>TEST METHOD</u>
Weight	1 oz/sq. yd (34 g/m ²)	
Roll Width	48 inch (1.2 m)	
Tensile Strength Length	6 lbs./in	ASTM D 1682 [6" (150 mm) strip]

Use Synthetic fiber blanket on slopes only.

F. Anchoring Staples

Use anchoring staples made from minimum 11-gauge wire, formed into a U shape. The legs will be at least 6 in (150 mm) long and the crown at least 1 in (25 mm) wide. Use staples rigid enough to penetrate the soil without distortion.

713.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

713.3 Construction Requirements

713.3.01 Personnel

General Provisions 101 through 150.

713.3.02 Equipment

General Provisions 101 through 150.

713.3.03 Preparation

Before placing the blanket, complete the grassing operations, smooth the area, and remove stones, lumps, roots, or other material that would prevent the blanket from laying snugly on the soil.

713.3.04 Fabrication

General Provisions 101 through 150.

713.3.05 Construction

A. Placing Blanket

Place blankets or mats vertically on slopes, beginning at the top of the slope and extending to the bottom of the slope. Horizontal installation of the blankets is not permitted.

Place the blanket within 24 hours after planting and before rain or watering. Place the blanket on slopes and waterways as follows:

1. On Slopes

Unroll the blanket with the netting on top and the fibers contacting the soil over the entire slope. When using two or more blankets to cover an area, overlay the joint 4 in (100 mm) and staple through the joint. Overlap the ends of the blanket at least 6 in (150 mm) with the upgrade section on top and staple through the overlap.

2. In Waterways

In waterways, ditches, flumes, and channels unroll the blanket with netting sewn on both sides and place in contact with the soil beginning at the downstream terminal and progressing upstream of the blanket according to the Construction Detail for Permanent Soil Reinforcing Mat.

Allow a longitudinal seam only if the blankets overlap at least 6 in (150 mm) and are securely stapled. Overlap ends of the blanket at least 6 in (150 mm) with the upgrade section on top.

Insert 12 in (300 mm) of the upslope end of the first row of blankets into a 6 in (150 mm) deep anchor slot. Staple the blanket in the slot bottom, backfill the slot, and solidly tamp.

B. Stapling

Drive staples vertically into the ground to anchor the plastic mesh. Place the staples approximately 2 yd (2 m) apart on each side of the blanket and add one row in the center alternately spaced between each side staple.

Where blankets lay side to side, place each staple so that half of the staple anchors mesh from each blanket.

At the beginning of a blanket, space staples approximately 12 in (300 mm) apart in a row.

C. Steep Slopes

The Engineer may specify additional staples or check slots in waterways where slopes are steep or large water volumes and/or velocities are anticipated.

713.3.06 Quality Acceptance

General Provisions 101 through 150.

713.3.07 Contractor Warranty and Maintenance

Maintain the blanket installation throughout the life of the Contract. If before Final Acceptance any staples become loose or lift up or if the blanket becomes loose, torn, or undermined, then fix the problem by reshaping, regrassing, refertilizing, or replacing damaged areas. Repairs are done without additional compensation.

713.4 Measurement

Straw blanket excelsior blanket, coconut fiber blanket, wood fiber blanket, or synthetic blanket, installed and accepted is measured for payment by the square yard (meter). Laps and blanket in the anchor slots are not measured. They are considered incidental to the work.

713.4.01 Limits

General Provisions 101 through 150.

713.5 Payment

The preliminary preparation of the areas on which the blanket is to be placed, including seeding or sodding, will be paid for under the appropriate Contract Items.

Straw blanket excelsior blanket, coconut fiber blanket, wood fiber blanket or synthetic fiber blanket will be paid for at the Contract Unit Price per square yard (meter). Payment is full compensation for the construction of the Item including all laps, materials, equipment, tools, labor, incidentals, and maintenance.

Payment will be made under:

Item No. 713	Straw blanket (slopes)	Per square yard (meter)
Item No. 713	Excelsior blanket (slopes)	Per square yard (meter)
Item No. 713	Excelsior blanket (waterways)	Per square yard (meter)
Item No. 713	Coconut fiber blanket (waterways)	Per square yard (meter)
Item No. 713	Wood fiber blanket (slopes)	Per square yard (meter)
Item No. 713	Synthetic fiber blanket (slopes)	Per square yard (meter)

713.5.01 Adjustments

General Provisions 101 through 150.

Section 714—Jute Mesh Erosion Control

714.1 General Description

This work includes furnishing and placing jute mesh over previously prepared grassed areas according to the Plans or as directed by the Engineer.

714.1.01 Definitions

Jute Mat: A mesh matting made of jute yarn.

714.1.02 Related References**A. Standard Specifications**

Section 106—Control of Materials

B. Referenced Documents

General Provisions 101 through 150.

714.1.03 Submittals

Provide a materials certification according to Subsection 106.05 that the materials meet the Specifications.

714.2 Materials

Ensure that materials conform with Subsection 106.05 and meet the requirements below.

A. Jute Mat

Use jute mat made of unbleached, undyed, and loosely-twisted yarn. The unit yarn weight shall be from 0.90 to 1.50 lb/yd² (488 to 814 g/m²). A 48 in (1.2 m) width shall show between 76 and 80 warpings, and a 36 in (900 mm) length shall show between 39 and 43 weftings. Furnish woven mesh strips of at least 45 in (1.1 m).

B. Anchoring Staples

Cold-drawn wire 14 gauge (2 mm) or wider in diameter, formed into a U shape from a wire 12 in (300 mm) or longer.